

# STREAM TRAILER VOLUNTEER GUIDE

General guidelines and information.

Volunteers are encouraged to tailor presentations based upon their knowledge, experience, and student interests.

You will have 5 groups for 20 minutes each. Cleanup at 2 minute warning.

## Keywords: Erosion & Deposition

**Set up:** One narrow meandering (curving) stream channel.

One steep mountainside (pile sand over large rocks) with a building at the bottom.

One parking lot (black rubber mat).

Green felt vegetation on steep mtn and long burlap vegetation along stream channel.

## Model – the stream trailer is a working model

This model is a representation of the real world. We use models because natural processes in the real world can be too large and take too long to watch in a 20 minute demo. The stream trailer can represent the Wasatch Front, Jordan River, Great Salt Lake, etc.

## Runoff – rain from watering can

- Use the watering can (aka “rain cloud”) to lightly “rain” on the sand. Compare with rain on the “parking lot.”
- Water on the parking lot does not soak in – so more runoff and more erosion.
- Water and other substances (like oil) go into the storm drain → canal → Jordan River → Great Salt Lake (pollution from our parking lot flows directly into the Jordan River; there is no sewer).

## Mudslide – rain from watering can

Place green felt “vegetation” on the steep mountainside (aka “Wasatch Front”) and a building at the bottom.

- Use the watering can (aka “rain cloud”) to “rain” on the mountainside. Observe that the vegetation helps the water soak into the ground and stabilizes the slope.
- Remove felt vegetation with a “wildfire.” Ask for predictions. Demonstrate rain again and observe the resulting “mudslide”/ “debris flow.” (Pour on enough water for a slide to occur – kids love it!)

## Erosion and Deposition

Make sure long “vegetation” strips are placed along both sides of the river channel, especially at bends.

- Ask kids to **define erosion** (the **movement** of sediment/rocks/earth materials **from one place to another** vs. weathering, which is only the wearing down of rock surfaces).
- Ask kids to predict what will happen. Where will erosion be the greatest? (at outside of curves / “cut banks,” because the water moves faster there)
- Start water and ask kids to observe what happens. Where is the erosion occurring? Why?
- Turn off water and remove vegetation (vegetation helps stabilize stream banks) from river bends. Turn on water at high flow and observe erosion.
- Also, ask where eroded material is deposited. As a “delta” in the “lake” around the stream trailer’s drain.

## Groundwater

- Have two PVC pipes inserted in sand (not filled with sand) as “wells” and compare the water table with water levels in “river channel” and “lake.” OR
- Have kids dig a hole in sand, away from the river channel to discover the water table.

- Ask how the water got from the river channel and/or lake to the well/ hole. It flowed through the sand, just like it does in the real world. Underground “rivers” are very rare.

### **Dam Failure**

- The “parking lot” can be used to make a dam that will rapidly fail due to poor foundation material.